

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A face recognition and/or verification method comprising the step of registering a persons actual face wherein an image of said actual face is captured and synthesized to create a plurality of face prototypes, said face prototypes representing possible appearances of said actual face under various lighting conditions, varying facial expressions, varying facial orientations, and/or modeling errors, and synthesizing the image of said actual face includes determining alternative facial positions for each eye to create the plurality of face prototypes so as to compensate for possible eye position errors,

wherein said face prototypes are stored for later analysis and comparison with a captured image to be recognised or verified, and wherein at least one of translational, rotational and scalar transformations is applied to the captured actual face image for normalization thereof.

2. (Cancelled)

3. (Previously Amended) The method as claimed in claim 1, wherein comparison of said face prototypes and captured image uses a face matching algorithm.

4. (Previously Amended) The method as claimed in claim 1, wherein comparison of said face prototypes and captured image uses face templates or feature vectors.

5. (Previously Amended) The method as claimed in claim 1, wherein synthesizing of said actual face includes normalising said actual face image based on the spatial relationship between at least two features of the actual face image.

6. (Previously Amended) The method as claimed in claim 5, wherein normalising includes rotating said actual face image to bring eyes of said actual face image to a horizontal plane.
7. (Previously Amended) The method as claimed in claim 5, wherein normalising includes scaling said actual face image such that the eyes are a fixed distance apart.
8. (Previously Amended) The method as claimed in claim 7, wherein said eyes are fixed at 50 pixels apart.
9. (Previously Amended) The method as claimed in claim 1 wherein the area above the persons eyebrows and below the persons mouth is not synthesized.
10. (Currently Amended) The method as claimed in claim 1 wherein synthesizing of said actual face includes determining alternative facial positions for each eye to create the plurality of face prototypes so as to compensate for possible errors comprises producing cropped images of the synthesized image of the said actual face, based upon the determined alternative facial positions for each eye.
11. (Currently Amended) The method as claimed in claim 1 1 10, wherein five alternative positions are determined for each eye.
12. (Previously Amended) The method as claimed in claim 1 wherein synthesizing of said actual face includes applying at least one predefined lighting mask to said actual face image.
13. (Previously Amended) The method as claimed in claim 12, wherein three to 16 predefined lighting masks are used.

14. (Previously Amended) The method as claimed in claim 1 wherein synthesizing of said actual face includes applying at least one predefined warping mask to said actual face image.

15. (Previously Amended) The method as claimed in claim 14, wherein 25 predefined warping masks are used.

16. (Previously Amended) The method as claimed in claim 12, wherein said at least one lighting mask includes photometric transform.

17. (Previously Amended) The method as claimed in claim 14, wherein said at least one warping mask includes geometric transform.

18. (Previously Amended) The method as claimed in claim 17, wherein said geometric transform is estimated using optical flow estimation.

19. (Previously Amended) The method as claimed in claim 16, wherein said photometric transform includes at least one of:

algorithmic function, exponential stretch, vertical shadow, horizontal shadow and differentiating image.

20. (Currently Amended) A facial prototype synthesis method wherein an image of a persons actual face is initially normalized by applying at least one of translational, rotational and scalar transformations thereto for subsequently creating a plurality of face prototypes, said face prototypes representing possible appearances of said actual face under various lighting conditions, varying facial expressions, varying facial orientations, and/or modeling errors, and synthesizing the image of said actual face includes determining alternative facial positions for each eye to create the plurality of face

prototypes so as to compensate for possible eye position errors, wherein said face prototypes are stored for later use

21. (Previously Amended) The method as claimed in claim 20, wherein said actual face image is normalized prior to creating said face prototypes based on the spatial relationship between at least two features of the actual face image.

22. (Previously Amended) The method as claimed in claim 21, wherein normalising includes rotating said actual face image to bring eyes of said actual face image to a horizontal plane.

23. (Previously Amended) The method as claimed in claim 21, wherein normalising includes scaling said actual face image such that the eyes are a fixed distance apart.

24. (Previously Amended) The method as claimed in claim 23, wherein said eyes are fixed at 50 pixels apart.

25. (Previously Amended) The method as claimed in claim 20, wherein the area above the persons eyebrows and below the persons mouth is not synthesized.

26. (Currently Amended) The method as claimed in claim 20, wherein ~~to create said face prototypes said system determines alternative positions for each eye so as to compensate for possible errors determining alternative facial positions for each eye to create the plurality of face prototypes so as to compensate for possible errors comprises producing cropped images of the synthesized image of the said actual face, based upon the determined alternative facial positions for each eye.~~

27. (Currently Amended) The method as claimed in claim 20 26, wherein five alternative positions are determined for each eye.

28. (Currently Amended) The method as claimed in claim 20 wherein to create said face prototypes said system method applies at least one predefined lighting mask to said actual face image.

29. (Previously Amended) The method as claimed in claim 28, wherein three to 16 predefined lighting masks are used.

30. (Currently Amended) The method as claimed in claim 20 wherein to create said face prototypes said system method applies at least one predefined warping mask to said actual face image.

31. (Previously Amended) The method as claimed in claim 30, wherein 25 predefined warping masks are used.

32. (Previously Amended) The method as claimed in claim 28, wherein said at least one lighting mask includes photometric transform.

33. (Previously Amended) The method as claimed in claim 30, wherein said at least one warping mask includes geometric transform.

34. (Previously Amended) The method as claimed in claim 33, wherein said geometric transform is estimated using optical flow estimation.

35. (Previously Amended) The method as claimed in claim 32, wherein said photometric transform includes at least one of:

algorithmic function, exponential stretch, vertical shadow, horizontal shadow and differentiating image.

36. (Previously Amended) The method as claimed in claim 20, wherein said face prototypes are generated by applying photometric and/or geometric transforms to said image.

37. (Previously Amended) A facial prototype synthesis method wherein an image of a persons actual face is normalised by applying at least one of translational, rotational and scalar transformations to the captured actual face image, and synthesized by determining possible alternative eye positions and applying at least one mask to said image to create a plurality of face prototypes, and wherein said face prototypes represent possible appearances of said actual face under various lighting conditions, varying facial expressions, varying facial orientations, and/or modeling errors.